

Smart-telecaster HD View V5 ユーザースガイド

株式会社ソリトンシステムズ

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※以下 Smart-telecaster を STC と呼称します。

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- VP8 は Google 社の商標です。
- NDI[®]は NewTek 社の商標です。
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株式会社ソリトンシステムズ
〒160-0022 東京都新宿区新宿 2-4-3
TEL: (03)5360-3860

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1. STC HD View V5

受信側の機材は、弊社推奨のインテル系 PC/AT 互換機に外部出力ボードを実装してのご提供となります。



図1. STC HD VIEW V5 接続(例)

1.1. 受信側必要環境

ネットワーク・インターフェイス

◀ 受信側には固定回線とグローバル IP アドレスが必要です。

※ STC Zao は各チャンネルへの着信に UDP ポート 31115 番、31116 番、31117 番、31118 番を使用します。ルータ配下に受信機を設置する場合は、ルータに対し NAT 設定 (UDP 31115~31118 のポートフォワード) が必要です。

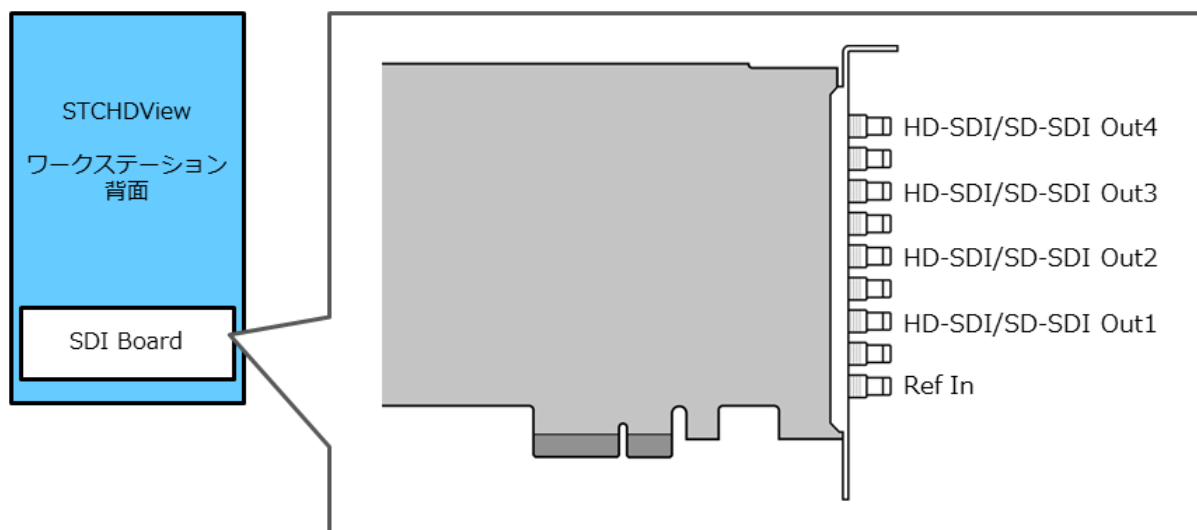
※ STC Zao-X は UDP ポートで各チャンネルへの着信に 42000 番、42001 番、42002 番、42003 番を使用します。ルータ配下に受信機を設置する場合は、ルータに対し NAT 設定 (UDP 42000~42003 のポートフォワード) が必要です。

外部出力 (弊社実装)

Blackmagic Design 社製 Decklink Quad 2

STC HD View の各チャンネルに受信したライブ映像と音声を Decklink Quad に搭載した 4 つのポートから外部出力します。チャンネルとポートの対応は下記の通りです。

- チャンネル 1 → HD-SDI/SD-SDI Out 1
- チャンネル 2 → HD-SDI/SD-SDI Out 2
- チャンネル 3 → HD-SDI/SD-SDI Out 3
- チャンネル 4 → HD-SDI/SD-SDI Out 4



DIN(オス)端子

DIN-BNC変換ケーブルは製品に付属

図2. 外部出力使用ポート



図3. ワークステーション背面

1.2. 起動

PCの電源を入れると、STC HD View V5 が自動起動します。

STC HD View V5 を手動で起動する場合は、デスクトップ上の「STC HD View V5」アイコン、または プログラムメニューの「Smart-telecaster HD」→「STC HD View V5」から起動します。Smart-telecaster HD View V5 が起動すると以下のメイン画面が表示されます。

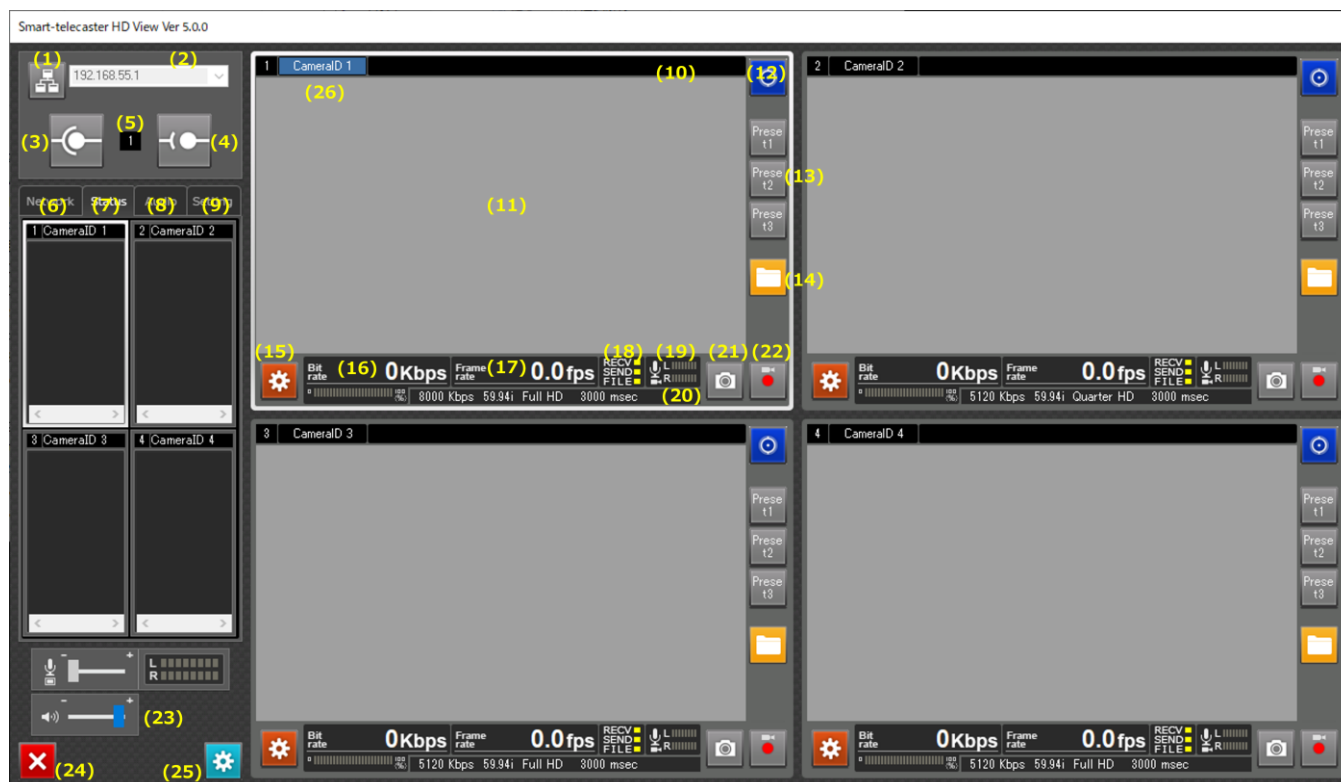


図4. メイン画面



図5. メイン画面(タブ内)

(1) 宛先選択ボタン

宛先選択画面を呼び出します。

注) 本バージョンでこの機能は使用できません。

(2) 宛先表示

宛先の名称や IP アドレスを表示します。

(3) 接続ボタン

注) 本バージョンでこの機能は使用できません。

(4) 切断ボタン

接続先との切断を行います。

注) STC Zao-X との接続時には使用しないで下さい。

(5) チャンネル表示

現在選択されているチャンネル番号を表示します。

(6) 回線状況表示タブ

選択されている送信元との接続に使用している通信回線の接続状況を表示します。

接続中は使用している通信回線の速度が数値とグラフで表示されます。

回線状況は接続中のみ表示されます。

各回線の横に文字入力ができ、モデム名等を記載しておくことができます。

(7) メッセージ表示タブ

STC HD View V5 の動作状況を表すメッセージを表示します。

(8) 音声スイッチタブ

通常、STC HD View V5 の音声は接続中のチャンネル全ての送信元に伝送されます。

音声スイッチを OFF にすると、その音声スイッチに該当するチャンネルの送信元との音声伝送を相互に切断します。


例) チャンネル 1 ～ 4 まで全て受信中で音声スイッチが全て ON の場合、STC HD View V5 の音声は全てのチャンネル向けに伝送されます。


チャンネル 1 の音声スイッチを OFF にした場合、チャンネル 1 との音声は相互に伝送されなくなりますが、チャンネル 2 ～ 4 との音声伝送はそのまま継続します。

(9) 設定値表示タブ

ライブ中継中の解像度、ビットレート、フレームレート、コーデック、デレイ、オーディオ、自動録画の設定値を表示します。

(10) 暗号化アイコン

宛先と暗号化接続をしている場合は  アイコンを表示します。

録画ファイルを開いている場合は  アイコンを表示します。

(11) プレビュー画面

受信したライブ映像を表示します。

(12) SDI 外部出力ボタン

受信側の機器構成により受信した映像が SDI で外部出力可能な場合はボタンが青くなります。各機器構成による外部出力は下記の通りです。

Blackmagic Design 社製 Decklink Quad2 使用時

全チャンネルが同時に外部出力可能となり、全チャンネルの外部出力ボタンが青くなります。また、このボード使用時は映像と同時に音声も出力します。

Blackmagic Design 社製 Decklink Quad2 以外のボード使用時

4つのチャンネルのうち、外部出力ボタンで選択した1チャンネルが外部出力可能となります。選択したチャンネルはボタンが青くなります。

外部出力ボード未使用時

全チャンネルの外部出力ボタンがグレーアウトし選択できません。

(13) プリセットボタン

STC HD View V5 では、任意の設定状態をプリセットとして登録しておくことができます。

プリセットボタンをクリックすると、登録されている設定値に一括設定することができます。

プリセットが選択されている場合は、選択プリセットのボタンが緑色に点灯します。

(14) 録画ファイルオープンボタン及び再生/一時停止ボタン

STC Zao で録画し、転送されたファイルを開くことができます。

ファイルを開くと  アイコンを表示します。

再生ボタンを押下すると  アイコンを表示します。

(15) 設定ボタン

各チャンネルの設定編集ダイアログを表示します。

(16) ビットレート表示

接続中、実効通信速度を数値で表示します。

同時に、TBR (target bitrate) に対する実効通信速度をレベルで表示します。

(17) フレームレート表示

接続中、フレームレートを表示します。

(18) 通信インジケータ [RECV、SEND、FILE]

通信が発生すると点滅します。

(19) 送信側音声インジケータ [Cam Audio indicator]

音声レベル

送信元からの受信音声レベルを表示します。音声モードがステレオになっている場合は上が左レベルで、下が右レベルです。音声モードがモノラルになっている場合は上下とも同じレベルが表示されます。

(20) 設定表示

ライブ中継中のビットレート、フレームレート、解像度、ディレイの設定値を表示します。

(21) 静止画ボタン

静止画を取得します。

(22) 録画ボタン

録画を開始/停止します。

(23) 受信側音声インジケータ [View Audio indicator]

マイク・アイコン

マイクからの音声入力にエラーが発生した場合、アイコン上に×マークが表示されます。

マイク・ボリューム

音声入力時のマイク・ボリュームを操作します。スライドバーを左に操作すると録音レベルが小さくなり、右に操作すると大きくなります。

スピーカー・アイコン

スピーカーへの音声出力にエラーが発生した場合、アイコン上に×マークが表示されます。

スピーカー・ボリューム

音声再生時のアプリケーション・ボリュームを操作します。スライドバーを左に操作すると音が小さくなり、右に操作すると大きくなります。

音声レベル

STC HD View V5 側の入力音声レベルを表示します。音声モードがステレオになっている場合は上が左レベルで、下が右レベルです。音声モードがモノラルになっている場合は上下とも同じレベルが表示されます。

◀ (24) 終了ボタン

アプリケーションを終了します。

(25) 共通設定ボタン

共通設定編集ダイアログを表示します。

(26) カメラ ID 表示

カメラ ID を表示します。STC Zao-X が接続できる ch では青色になります。

1.3. 音声の入出力デバイスについて

STC HD View V5 は、音声入力／出力に Windows の既定の録音デバイス／再生デバイスを使用します。

音声入力ソースを変更する場合は、使用する録音デバイスを接続し Windows の既定の録音デバイスに設定してから STC HD View V5 を起動して下さい。

また、音声再生を外部出力ボード経由で出力する場合には、本アプリケーションが自動的に外部出力ボードを使用しますので、Windows の既定の再生デバイスを外部出力ボードのオーディオ・デバイス以外に設定して下さい。

注) 弊社からの出荷の際、音声再生を外部出力ボード経由にする場合は、Windows のシステム音を外部出力ボードへ出力しないように設定を行っています。

ご都合により OS の入れ替え等を行った場合には、本アプリケーションが自動的に外部出力ボードを使用しますので、Windows の既定の再生デバイスを外部出力ボードのオーディオ・デバイス以外に設定して下さい。

Windows のシステム音を外部出力ボードへ出力しないようにするには、STC HD View V5 を起動し、タスクトレイの音量ミキサーで「システム音」の音量を 0 に設定して下さい。

この操作は外部出力ボードを既定の再生デバイスに設定した際に一度だけ実施します。設定後、STC HD View V5 の起動中はシステム音が抑止されます。

1.4. ライブ設定編集

送信元と接続する際の映像・音声等の設定を編集します。

設定編集ダイアログは各チャンネルで独立しているため全てのチャンネルで設定する必要があります。

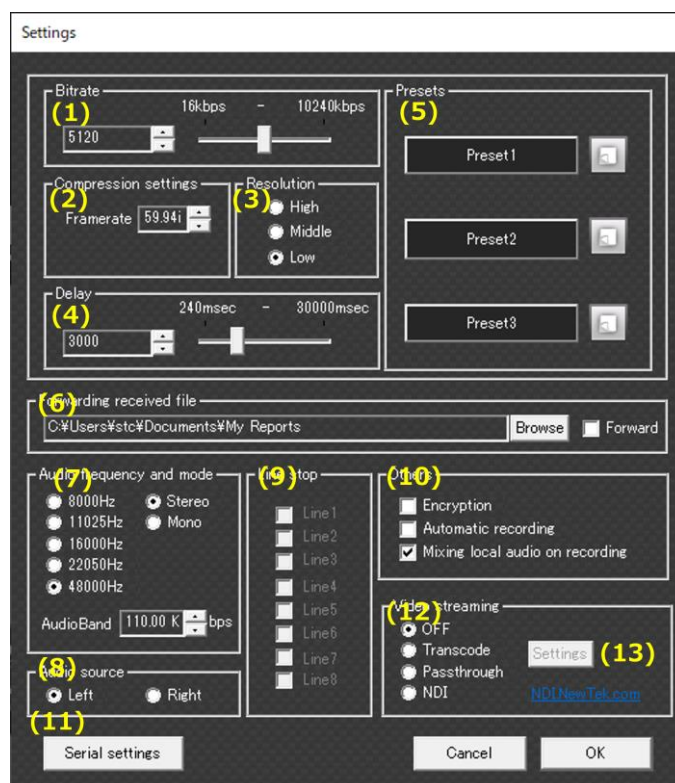


図6. ライブ設定編集ダイアログ

(1) ビットレート [Bitrate]

通信帯域を指定します。

注) 設定値できる最大値は、接続する送信機によって異なります。

STC Zao : 10Mbps

STC Zao-S : 5Mbps

STC Zao-X : 8Mbps

STC Zao App : 5Mbps

(2) フレームレート [Framerate]

フレームレートを指定します。

(3) 解像度 [Resolution]

ライブ中継の解像度を指定します。各設定による解像度は下記表の通りです。

注) 送信機が Zao/Zao-S (入力：インターレース映像) で Middle 解像度設定の場合、フレームレートの設定値により実効解像度が変わります。(表 1, 表 5, 表 6 参照)

表 1. 解像度設定と実行解像度の関係(1080i)

中継端末：STC Zao/Zao-S（入力映像：1080 59.94i/50i）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	59.94i/50i	960 x 1080
	29.97/25	1920 x 540
Low	－	960 x 540

表 2. 解像度設定と実行解像度の関係(1080P)

中継端末：STC Zao-S（入力映像：1080 59.94p/50p）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	－	1920 x 540
Low	－	960 x 540

表 3. 解像度設定と実行解像度の関係(1080 29.97P/25P)

中継端末：STC Zao/Zao-S（入力映像：1080 29.97p/25p）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	－	1920 x 540
Low	－	960 x 540

表 4. 解像度設定と実行解像度の関係(720P)

中継端末：STC Zao/Zao-S（入力映像：720 59.94p/50p）		
解像度設定	フレームレート設定	実効解像度
High	－	1280 x 720
Middle	－	640 x 720
Low	－	640 x 360

表 5. 解像度設定と実行解像度の関係(SD)

中継端末：STC Zao/Zao-S (入力映像：480 59.94i)		
解像度設定	フレームレート設定	実効解像度
High	–	720 x 480
Middle	59.94i	360 x 480
	29.97	720 x 240
Low	–	360 x 240

表 6. 解像度設定と実行解像度の関係(SD)

中継端末：STC Zao/Zao-S (入力映像：576 50i)		
解像度設定	フレームレート設定	実効解像度
High	–	720 x 576
Middle	50i	360 x 576
	25	720 x 288
Low	–	360 x 288

表 7. 解像度設定と実行解像度の関係(ZAO APPS)

中継端末：STC Zao App (Android/iOS)		
解像度設定	フレームレート設定	実効解像度
High	–	1920 x 1080
Middle		1280 x 720
Low		640 x 360

表 8. 解像度設定と実行解像度の関係(ML)

中継端末：STC for iOS/Android ML		
解像度設定	フレームレート設定	実効解像度
High	–	960 x 540
Middle		640 x 360
Low		

解像度の設定は、未接続の場合はいずれの設定でも可能ですが、接続中は送信側の映像キャプチャーの種類によりSD設定またはHD設定のどちらかに制限されます。接続中に設定変更した場合は、切断後もその設定が有効になります。

(4) デレイ [Delay]

受信側のバッファリングを指定します。バッファリングは 240msec～30000msec で指定することができます。

受信側のバッファリングの指定により、受信したデータをすぐに再生せずにバッファリング時間分だけ遅延させて再生することでフレーム更新間隔の乱れを抑えます。

※ 送信側で使用する通信回線の種類／組み合わせによる参考値

有線 LAN を使用する場合 240msec 以上

4G 回線のみ構成の場合 720msec 以上

3G 回線が構成に含まれる場合 1200msec 以上

衛星回線 (BGAN など) を使用する場合 4000msec 以上

回線を混合する場合は、通信速度の遅い方にあわせて設定して下さい。

尚、この参考値はすべての状況／組み合わせを保証するものではありません。

また、回線の混雑状況や電波状況により、通信速度が安定しない場合があります。
その場合は、移動をやめカメラを固定することやディレイを延ばすことで安定性を増すことができます。

(5) プリセット [Presets]

STC HD View V5 は、任意の設定状態をプリセットとして登録しておくことができます。

① プリセット選択ボタン

プリセット選択ボタンをクリックすると、選択状態（ボタンが緑色点灯）になり、設定編集ダイアログ内の各設定値がプリセットに登録されている値に一括変更されます。

尚、各ボタンには登録時に指定したプリセット名が表示されます。



図7. プリセット選択ボタン

② プリセット登録ボタン

プリセット登録ボタンをクリックするとプリセット登録ダイアログが表示されます。

プリセット名を指定し Save ボタンをクリックすると、現在の設定値がプリセットとして登録され、かつ選択状態になります。

Cancel ボタンをクリックすると、プリセット登録はキャンセルされます。

尚、プリセット名はメイン画面のプリセットボタンにも反映されます。また、接続中は Cam 側のプリセット表示の名称にも反映されます。プリセットが選択されている場合は、選択プリセットのボタンが緑色に点灯します。プリセットの選択状態は、任意の設定値が変更されると解除されます。

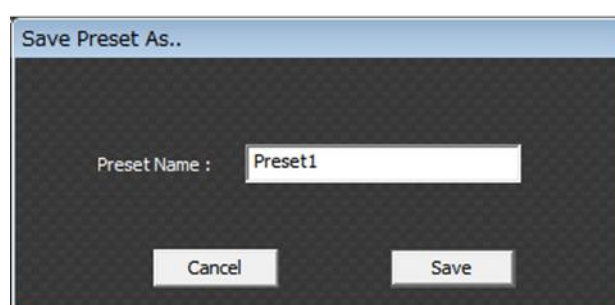


図 8. プリセット登録ダイアログ

(6) 受信ファイルの転送 [Forwarding received file]

受信したファイルの保存フォルダを指定します。

(7) 音声周波数およびチャンネル [Audio frequency and mode]

音声のサンプリング・レートおよびステレオ/モノラルと、音声帯域を指定します。

注) 順方向音声と送り返し音声、共通の設定です。

音声周波数 [Audio frequency]

音声送受信に使用するサンプリング・レートを指定します。

注) 送信機が iOS ML の場合、22050Hz 固定となります。

音声チャンネル [mode]

音声入力チャンネルがステレオかモノラルかを指定します。

音声帯域 [AudioBand]

音声送信に使用する帯域量 (Kbps) を指定することができます。

尚、設定可能な帯域幅は音声周波数とチャンネルの組合せにより以下の範囲になります。

表 9. 音声周波数とビットレートの関係

音声周波数	ステレオ (Kbps)	モノラル (Kbps)
8000Hz	11.71 ~ 62.50	7.81 ~ 41.01
11025Hz	15.62 ~ 85.93	11.71 ~ 48.82
16000Hz	23.43 ~ 167.96	15.62 ~ 97.65
22050Hz	29.29 ~ 167.96	15.62 ~ 87.89
48000Hz	68.35 ~ 488.28	31.25 ~ 234.37

(8) 音声ソース選択 [Audio source]

音声チャンネルがモノラル時に音声入力を左にするか右にするか指定します。

- ① Left 左チャンネルを使用して音声入力をモノラルとして扱います。
- ② Right 右チャンネルを使用して音声入力をモノラルとして扱います。

(9) 送信側回線の制御 [Line stop]

STC HD View V5 には、接続中に使用している回線を受信側から個別に一時停止／再開させることができるページ機能があります。（複数回線で接続中の場合のみ有効です）

使用中の回線を一時停止させる場合は、停止したい回線にチェックを入れて OK ボタンをクリックします。

一時停止を解除し再び回線を使用する場合は、再開したい回線のチェックを外して OK ボタンをクリックします。

ページ機能はライブ中継を維持したまま操作することができます。本機能を使用することにより、中継位置の移動等で通信速度が低下した回線を一時的に切り離すことや、回線状態を復帰させる為にリダイヤル（切断→再接続）させることができます。

(10) その他 [Others]

暗号化 [Encryption]

通信データを暗号化する場合に指定します。

自動録画 [Automatic recording]

宛先と接続した際に自動的に録画を開始するかどうかを指定します。

注)自動録画機能を使用するためには、LocalRec Mode を ON にする必要があります。

録画時のローカル音声ミキシング [Mixing local audio on recording]

STC HD View 側での録画の際、STC HD View 側のマイク入力を AVI ファイルに収録するかどうかを指定します。

注)録画時の音声ミキシング機能を利用するためには、LocalRec Mode を ON にする必要があります。

(11) シリアルポート設定

シリアル通信設定ウィンドウを表示させます。

- ・Port:シリアル通信可能な COM ポートを選択できます。
- ・Bitrate:ビットレート（ボーレート）を設定できます。
- ・Data bit:データビットを設定できます。
- ・Stop bit:ストップビットを設定できます。
- ・Parity:パリティを設定できます。

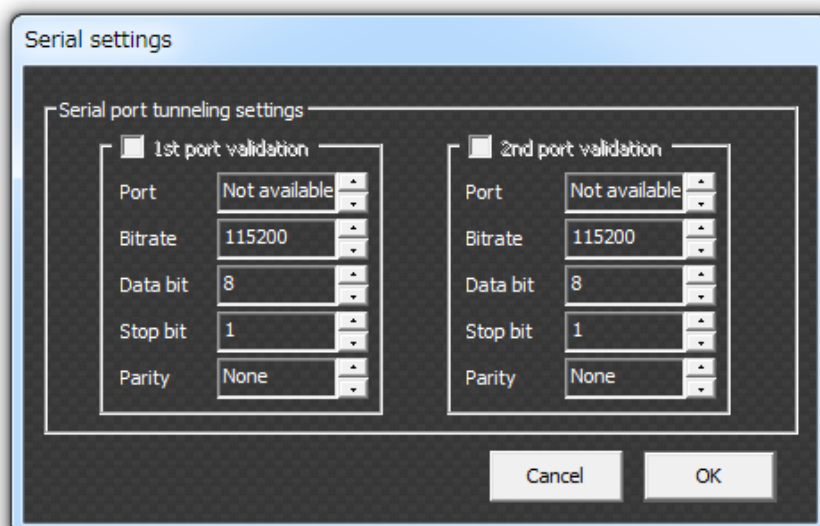


図 9. シリアルポート設定

(12) Video streaming

受信映像を再配信する際の方式を選択することができます。
使用する配信方式を一つ選択して下さい。
複数選択することはできません。

[OFF]

Video streaming 機能を利用しません。

[Transcode]

受信映像を H.264 に変換し RTMP 配信します。
YouTube や Facebook などへ配信する場合にご利用下さい。設定方法に関しては後述します。

[Passthrough]

受信映像を変換せず RTSP 配信します。
VLC メディアプレイヤーや milestone Xprotect などへ配信する際にご利用下さい。設定方法に関しては後述します。

[NDI]

NDI 出力機能を利用できます。
チェックボックスを ON にした場合、自動的に NDI 出力されます。
送信機で設定した STC Cam 名称が TriCaster 側に表示されます。

(13) Video streaming 設定

Video streaming の詳細設定を行うことができます。
詳しい設定方法については後掲します。



1.5. ライブ設定編集(STC Zao-X 接続設定時)

STC Zao-X 接続設定時、設定編集メニューは以下のようになります。

注) STC Zao-X はエンコードモード Normal mode で接続して下さい。

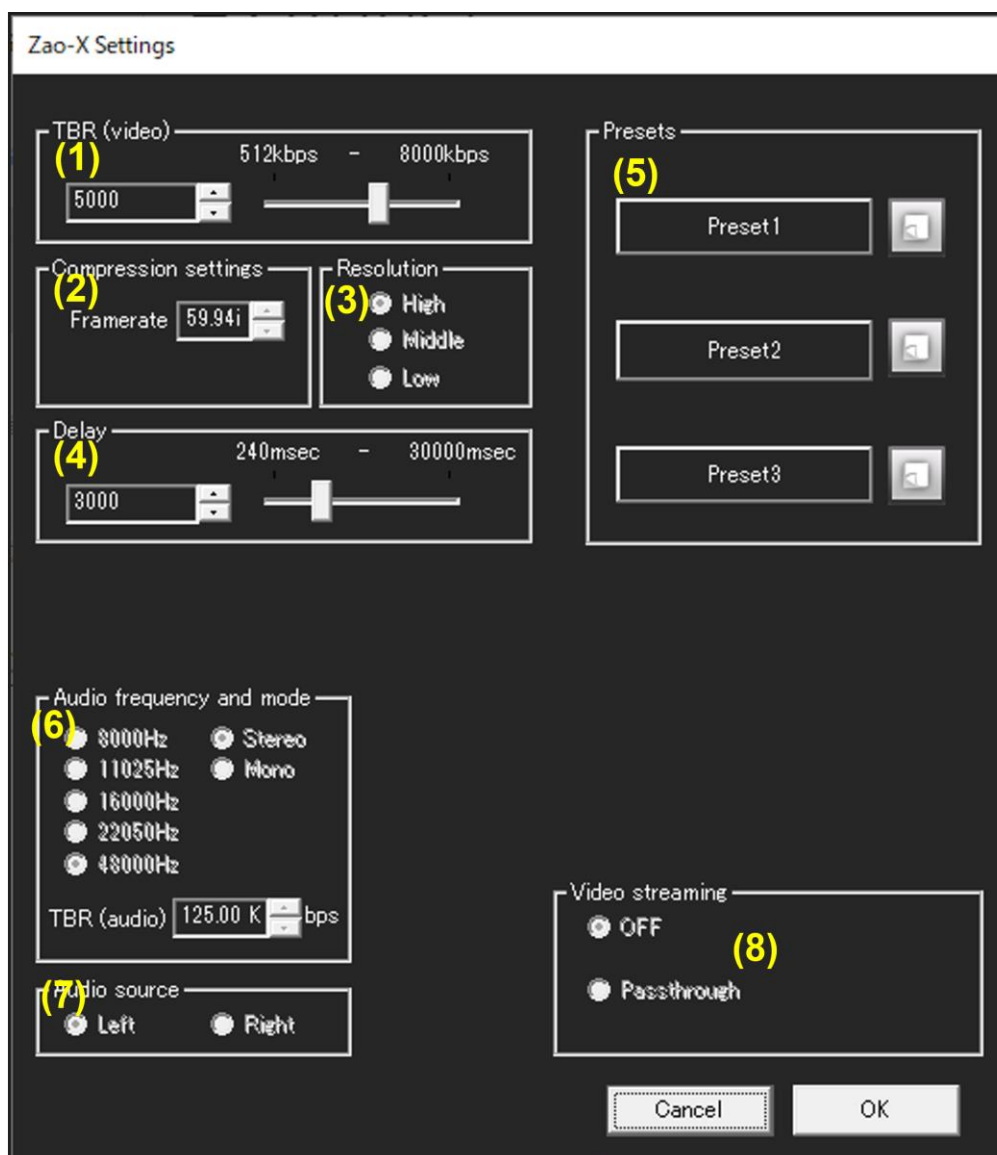


図 10.ライブ設定編集ダイアログ(STC ZAO-X 接続設定時)

1. ビットレート [Bitrate]

通信帯域を指定します。

512-8000kbps の間で設定することができます。

2. フレームレート [Framerate]

注) 本バージョンでは入力映像フォーマットのフレームレートに固定されます。

3. 解像度 [Resolution]

注) 本バージョンでは High (入力映像フォーマットの映像サイズ) に固定されます。

4. デレイ [Delay]

受信側のバッファリングを指定します。バッファリングは 240msec~30000msec で指定することができます。

5. プリセット [Presets]

STC HD View V5 は、任意の設定状態をプリセットとして登録しておくことができます。

① プリセット選択ボタン

プリセット選択ボタンをクリックすると、選択状態（ボタンが緑色点灯）になり、設定編集ダイアログ内の各設定値がプリセットに登録されている値に一括変更されます。
尚、各ボタンには登録時に指定したプリセット名が表示されます。



図 11. プリセット選択ボタン

② プリセット登録ボタン

プリセット登録ボタンをクリックするとプリセット登録ダイアログが表示されます。

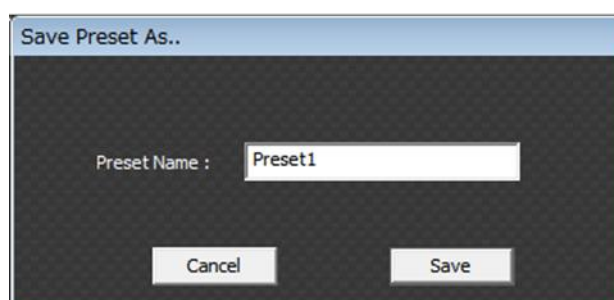


図 12. プリセット登録ダイアログ

プリセット名を指定し Save ボタンをクリックすると、現在の設定値がプリセットとして登録され、かつ選択状態になります。
Cancel ボタンをクリックすると、プリセット登録はキャンセルされます。
尚、プリセット名はメイン画面のプリセットボタンにも反映されます。
プリセットが選択されている場合は、選択プリセットのボタンが緑色に点灯します。
プリセットの選択状態は、任意の設定値が変更されると解除されます。

6. 音声周波数およびチャンネル [Audio frequency and mode]

注) 本バージョンでは、音声帯域設定以外設定変更できません。

本設定は「順方向 Embedded 音声の設定」になります。

送り返し音声は「48KHz, Stereo, TBR:128kbps」固定になります。

音声周波数 [Audio frequency]

注) 本バージョンでは 48000Hz に固定されます。

音声チャンネル [mode]

注) 本バージョンでは Stereo に固定されます。

音声帯域 [TBR]

音声送信に使用する帯域量 (Kbps) を 15.62-312.50kbps の間で指定することができます。

7. 音声ソース選択 [Audio source]

注) 本バージョンでは Stereo 設定に固定されているため、音声ソースの Left/Right は選択できません。

8. Video streaming

[OFF]

Video streaming 機能を利用しません。

[Passthrough]

受信映像を変換せず RTSP 配信します。

VLC メディアプレイヤーや milestone Xprotect などへ配信する際にご利用下さい。設定方法に関しては後述します。

1.6. 共通設定

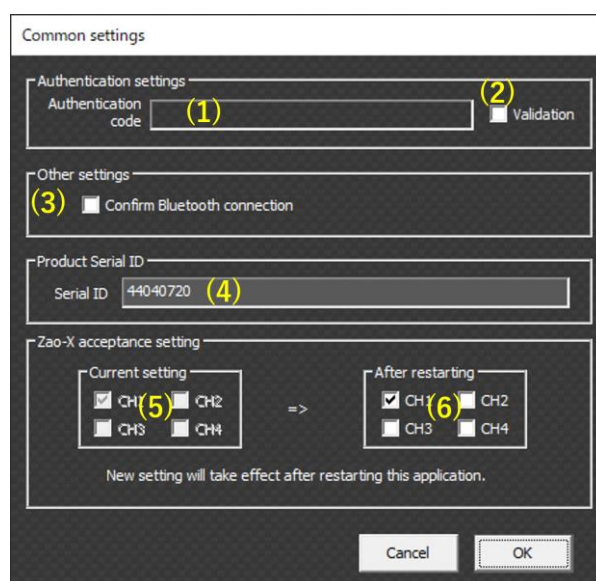


図 13. 共通設定ダイアログ

接続認証設定 [Authentication setting]

(1) 接続認証コード [Authentication code]

送信元との接続認証のためのコードを設定します。

認証コードは、半角英数字で 30 文字まで設定することができます。(入力したコードは * で表示されます)

本機能は、認証有効フラグが ON の場合のみ有効です。

注) 送信機が STC Zao-X の場合、本機能はご利用になれません。

(2) 認証有効フラグ [Validation]

チェック ON 時 : 接続認証コードを有効にします。

チェック OFF 時 : 接続認証コードを無効にします。

注) 接続認証を有効にした場合は、設定した認証コードと同じ認証コードを持つ送信元のみが接続することができます。送信元の認証コードが異なる場合、または無効な場合は、STC HD View V5 と接続することはできません。

その他の設定 [Other settings]

(3) Bluetooth 機器の確認を行う [Confirm Bluetooth connection]

注) 本バージョンでこの機能は使用できません。

ライセンス情報表示 [Product Serial ID]

(4) シリアル ID [Serial ID]

登録されているシリアル ID を表示します。

Zao-X 接続設定 [Zao-X acceptance setting]

(5) Current setting

現在の STC HD View V5 の STC Zao-X の接続設定が表示されます。

✓が付いている CH に Zao-X を接続することができます。

(6) After restarting

✓を付けた CH に Zao-X を接続できるように設定することができます。

注) 設定変更後、設定を反映するためには STC HD View V5 の再起動が必要になります。

設定反映後、After restarting の設定が Current setting に反映されます。

1.7. 録画再生機能

Zao の Rec&Go 機能で転送した録画データを HDView で再生することができます。

Zao から転送されてきたファイルは、TAF 形式 (Soliton Systems オリジナルフォーマット) で保存されます。

※保存先は、デフォルト設定の場合、ドキュメントの MyReports フォルダ内に保存されます。

録画ファイルの展開と再生

(1) File オープンボタンをクリックすると、ドキュメントの MyReports フォルダが開かれます。

(2) 再生したい録画データを選択します。

※ファイルによっては読み込みに時間がかかる場合があります。

(3) 再生可能状態になると、(1)の File オープンボタンが、再生ボタンに変化します。

再生中は一時停止ボタンに変化し、一時停止が行えます。

(4) ファイル再生を中止したい場合は、右上の×ボタンをクリックすることで中止できます。

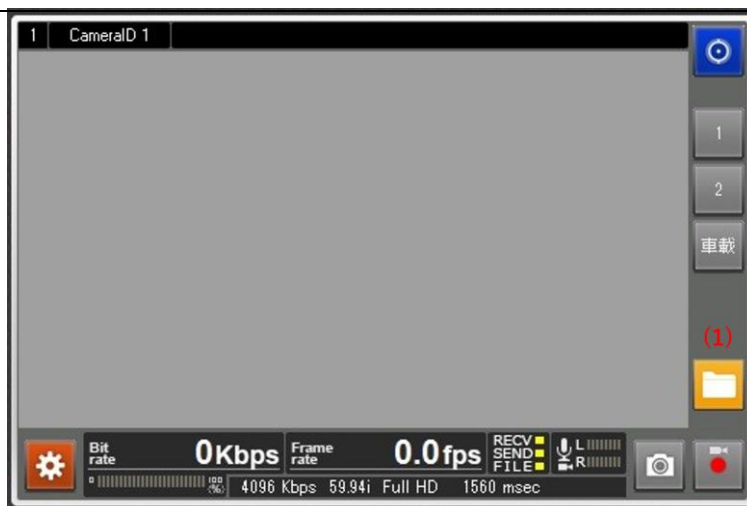


図 14. REC&GO ファイル選択ボタン



図 15. REC&GO ファイル再生、中止ボタン

2. Transcode 再配信機能

2.1. 設定編集

Transcode 再配信モード、ローカル録画モード、共通の設定ダイアログです。

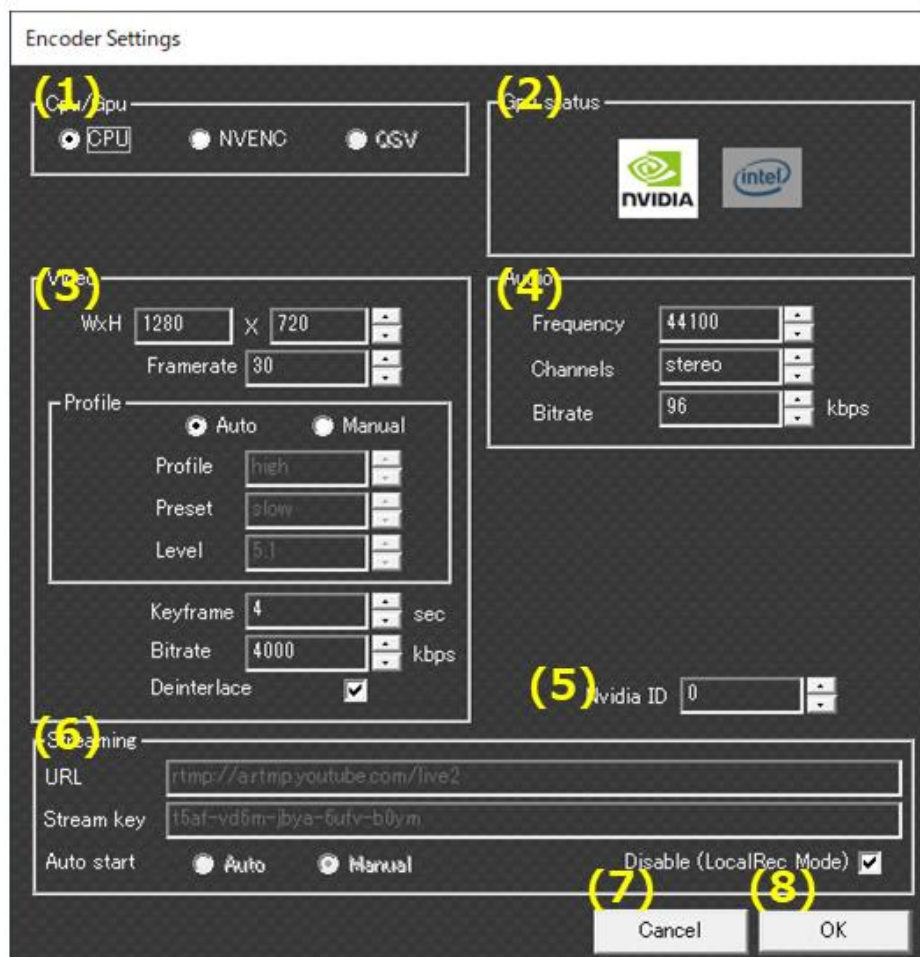


図 16. TRANSCODE 再配信設定編集ダイアログ

(1) Cpu/Gpu

サポートしている GPU もしくは CPU を選択して下さい。

(2) Gpu status

STC HD View 起動時に GPU ステータスをチェックしています。



(3) Video

各フォーマットを選択して下さい。

表 10. 幅 x 高さ (W x H)

No	width	height	remarks
1	1920	1080	default
2	1280	720	
3	960	540	
4	640	360	
5	320	180	

表 11. FRAMERATE

No	Framerate	Remarks
1	60	* It is effective only when setting 720p/60fps
2	50	* It is effective only when setting 720p/50fps
3	30	default(NTSC)
4	25	default(PAL)
5	15	

Profile グループ

- ・「Auto」の場合 : 「Profile」「Preset」「Level」は自動的に設定されます。
- ・「Manual」の場合 :

表 12. PROFILE

No	Profile	remarks
1	High	default
2	Main	

表 13. PRESET

No	Preset	remarks
1	Slow	default
2	Medium	
3	Fast	

表 14. LEVEL

No	Level	remarks
1	5.1	default
2	5.0	
3	4.2	
4	4.1	
5	4.0	
6	3.2	
7	3.1	

表 15. KEYFRAME

No	Keyframe(sec)	remarks
1	10	
2	9	
3	8	
4	7	
5	6	
6	5	
7	4	default
8	3	
9	2	
10	1	

表 16. BITRATE(VIDEO BITRATE)

No	Bitrate(kbps)	remarks
1	10000	
2	9500	
3	9000	
4	8500	
5	8000	
6	7500	
7	7000	
8	6500	
9	6000	
10	5500	
11	5000	
12	4500	
13	4000	
14	3500	
15	3000	
16	2500	
17	2000	default
18	1000	
19	750	
20	500	
21	250	

表 17. インターレース解除 DEINTERLACE

No	Deinterlace	remarks
1	Checked(ON)	default
2	No checked(OFF)	

(4) Audio

表 18. FREQUENCY

No	Samplerate	remarks
	48000	Local Rec mode
1	44100	default
2	22050	
3	11025	

表 19. CHANNELS

No	Samplerate	remarks
1	Stereo	default
2	Mono	

表 20. BITRATE(AUDIO BITRATE)

No	Bitrate(kbps)	remarks
1	96	default
2	112	
3	160	
4	192	
5	224	

(5) Nvidia ID

2つのGPUがインストールされている場合、nvencに使用するカードを選択できます。

表 21. NVENC

No	NvidiaID	Remarks
1	0	default
2	1	

(6) Streaming

RTMP url

手動で RTMP URL の入力が可能です。

Stream key

手動で Stream key の入力が可能です。

Auto start

•Auto

送信機と受信機の接続が安定すると、自動的にストリーミングを開始します。

•Manual

送信機と受信機の接続が安定し、手動で配信の開始及び停止が出来ます。

Disable (Local Rec Mode)

IP ストリーミング機能を無効化し、ローカル録画を行うことが出来ます。

表 22. LOCAL REC MODE

No	Local Rec Mode	remarks
1	チェックあり(ON)	Default
2	チェックなし(OFF)	



(7) Cancel

設定ウインドウを閉じます。(設定内容は保存されません)

(8) OK

設定ウインドウを閉じます。(設定内容は保存されます)

2.2. Transcode ステータスウィンドウ表示設定

デフォルトではライブ中に Transcode ステータスウィンドウはポップアップしません。表示する場合は以下を設定して下さい。

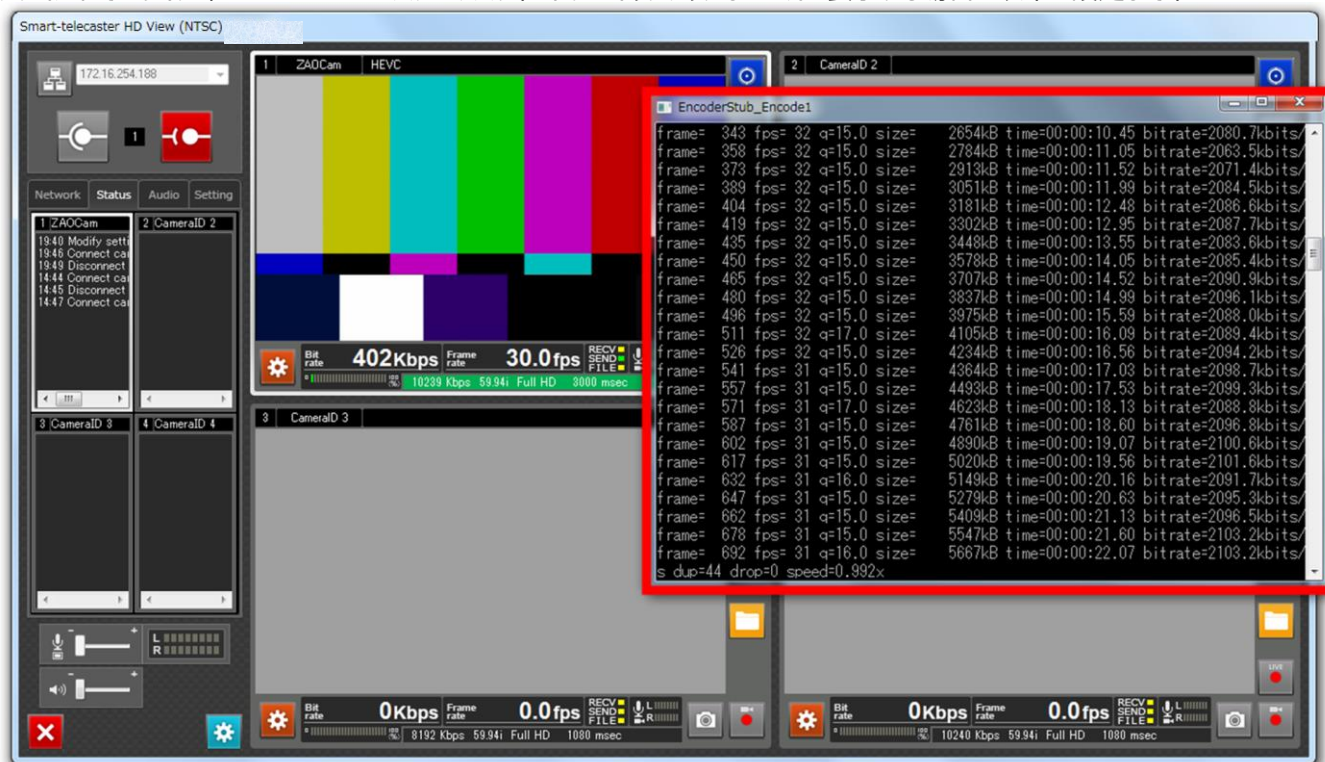


図 17. TRANSCODE ステータスウィンドウ表示

C:\Program Files (x86)\Smart-telecaster HD\STCView (NTSC)\x64\EncoderStub.ini

※EncoderStub.ini はお使いの環境、インストール先によって配置場所が異なる場合がございます。

```

[CONFIG]
check_interval = 100
encstart_waittime = 500
encend_waittime = 500
comm_timeout = 300
program_reg_interval = 15000
encoder_path = "C:\Program Files (x86)\Smart-telecaster
HD\bin\StreamPusher\StreamPusher.exe"
segment_time = 3600
localrec_format = "mp4"
hide_window = 1 ⇒ Please Change to 0 (表示).
  
```

2.3. Transcode 再配信ボタン／ローカル録画ボタン

Transcode 再配信が有効な場合

ローカル録画モード（Local Rec mode）が無効で送信機と接続されている場合は、配信ボタンが表示されます。



図 18. TRANSCODE 再配信モード

ローカル録画モード（Local Rec mode）が有効な場合

Local Rec mode が有効で送信機が接続されている場合にスナップショットボタンと録画ボタンが有効になります。

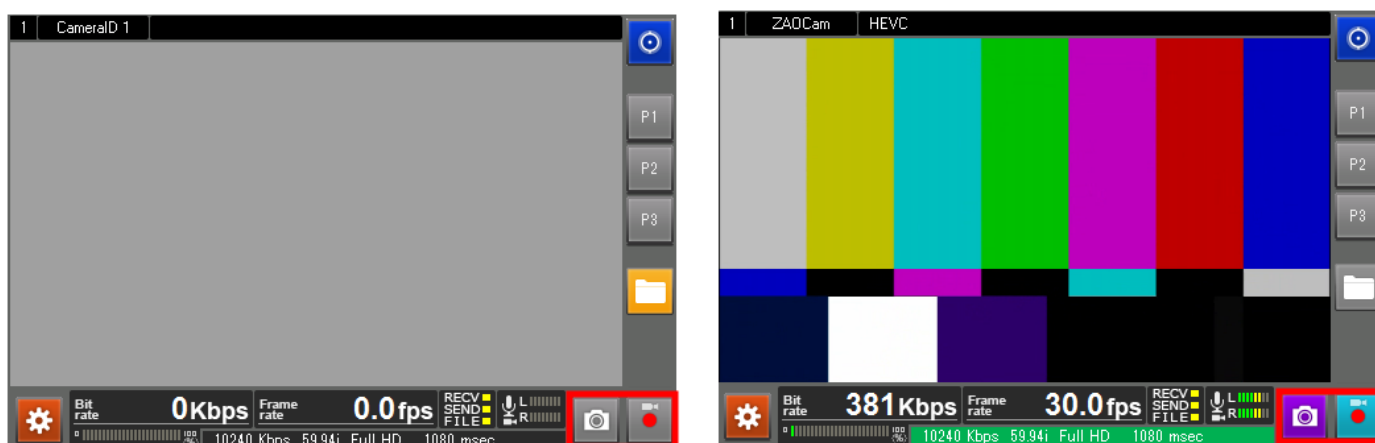


図 19. ローカル録画モード

中継が開始されると録画ボタンが有効になり、押すと録画開始されます。
録画ファイルの保存先は、デフォルトで「ドキュメント/My Reports」となります。



スナップショット、録画ファイルのメディアフォーマットは、それぞれ下記となります。

表 23. FILENAME FORMAT

No	Filename Format	remarks
1	[Transmitter-Name]_yyyyMMddHHmmss_[ch].mp4	mp4
2	[Transmitter-Name]_yyyyMMddHHmmss_[ch].jpg	jpg

2.4. Transcode 再配信設定例

2.4.1 YouTube

YouTube にログインし、[クリエイターツール](#)から、[ライブストリーミング](#)を表示します。

表示される[エンコーダの設定]を、STC HD View の URL と Stream key にコピーします。

The screenshot shows the YouTube Live Dashboard interface. The 'Encoder Settings' section is highlighted with a red box. The 'Server URL' field contains the text 'rtmp://a.rtmp.youtube.com/live2'. The 'Stream Name / Key' field contains a partially visible stream key. A red line connects the 'Stream Name / Key' field to a 'Streaming' window in the bottom right corner. This window shows the 'URL' and 'Stream key' fields filled with the corresponding values from the YouTube dashboard. The 'Streaming' window also has 'Auto start' set to 'Auto' and 'Disable (LocalRec Mode)' checked.

図 20. TRANSCODE 再配信設定例 (YOUTUBE)

2.4.2 Facebook

Facebook にログインし、「ライブ動画」をクリックします。



図 21. FACEBOOK 画面

[接続する]をクリックし、表示される[サーバーURL]と[ストリームキー]を、STC HD View の URL と Stream key にコピーします。

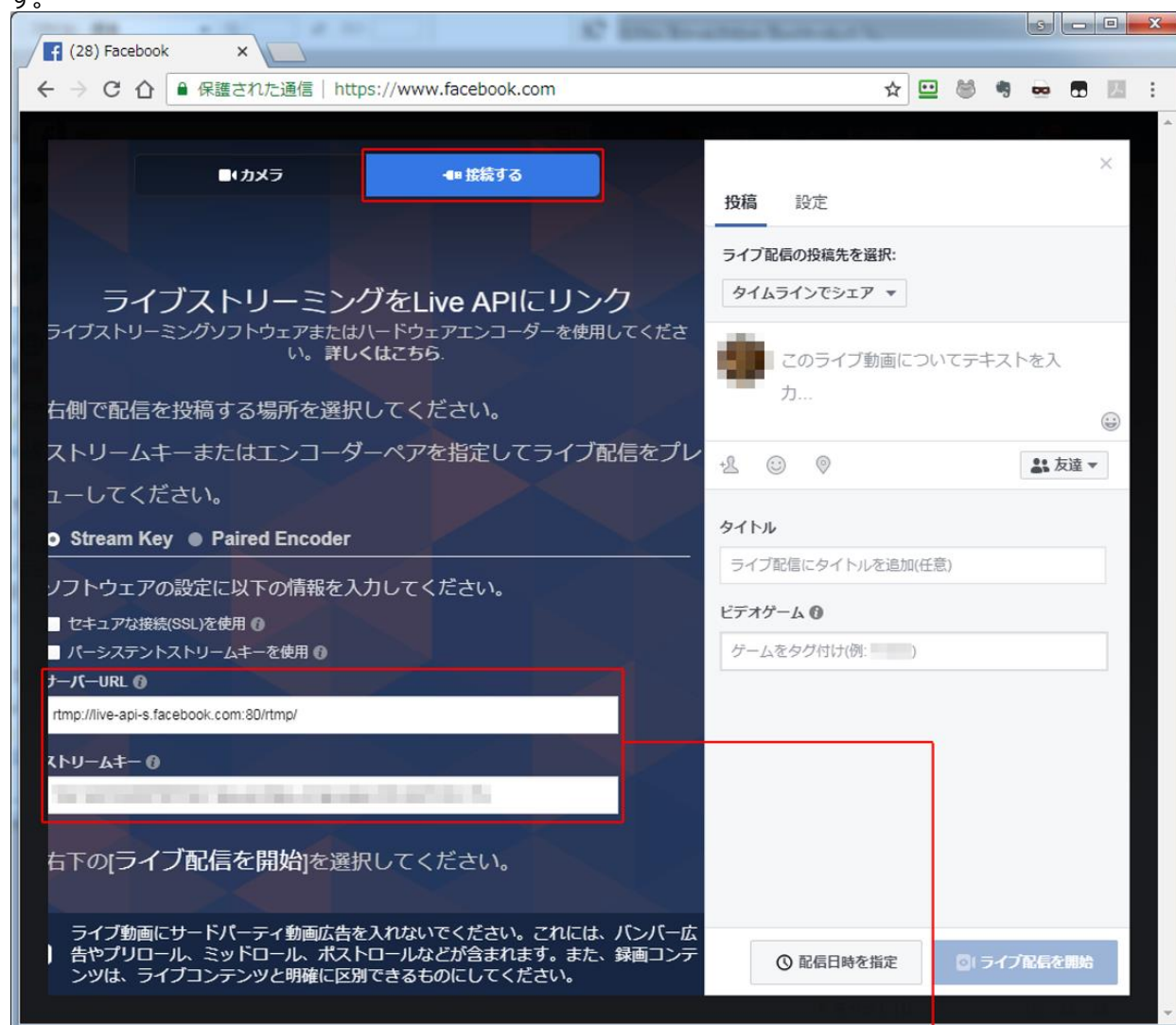


図 22. TRANSCODE 再配信設定例 (FACEBOOK)

3. Passthrough 再配信機能

(1) [VLC Media Player](#)をインストールします。

※動作確認済み VLC Media Player : v2.2.4

(2) VLC Media Player を起動し、[Media] - [Open Network Stream]をクリックします。

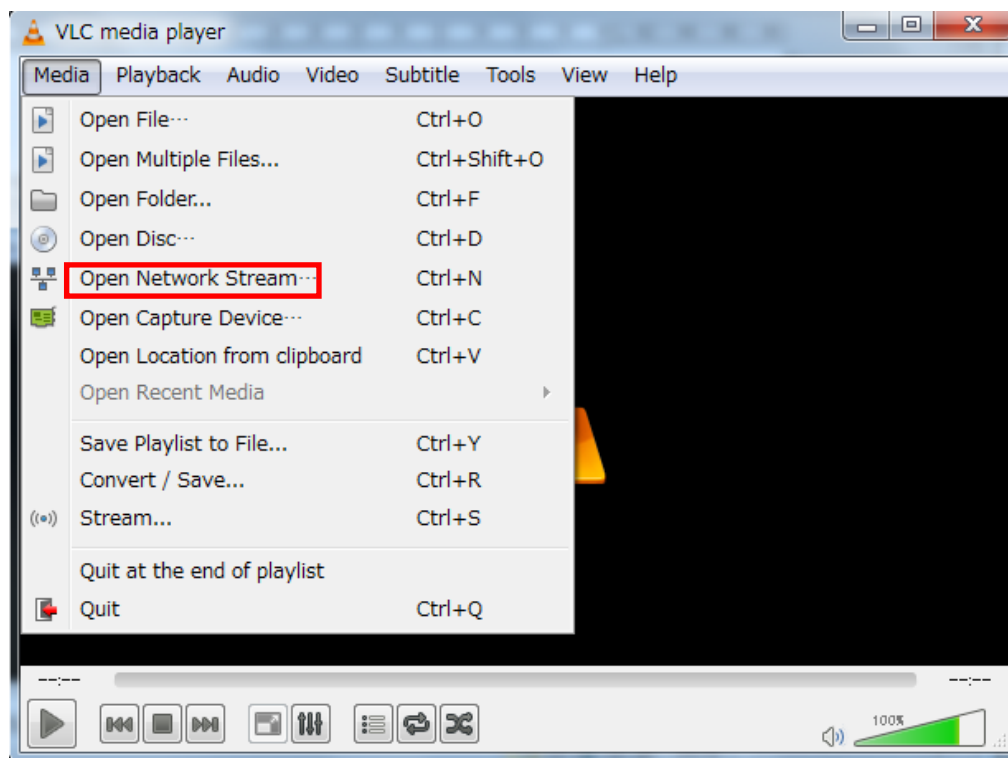


図 23. VLC MEDIA PLAYER

(3) RTSP の URL を以下のように指定します。

・rtsp://[HD View Single の IP アドレス]:20011/stc

※設定例は 1ch 目に受信した映像を配信する場合です。2ch 以降の受信映像を配信する場合には IP アドレス以下のポート指定をそれぞれ 20021,20031,20041 に設定してください。

(4) Play ボタンをクリックするとストリーミングが開始されます。

※RTSP によるストリーミングは使用帯域幅の大きい配信です。ローカルネットワークによる限定閲覧を推奨します。

※ネットワーク経由でストリーミングする場合は、ファイアウォールの設定を行ってください。

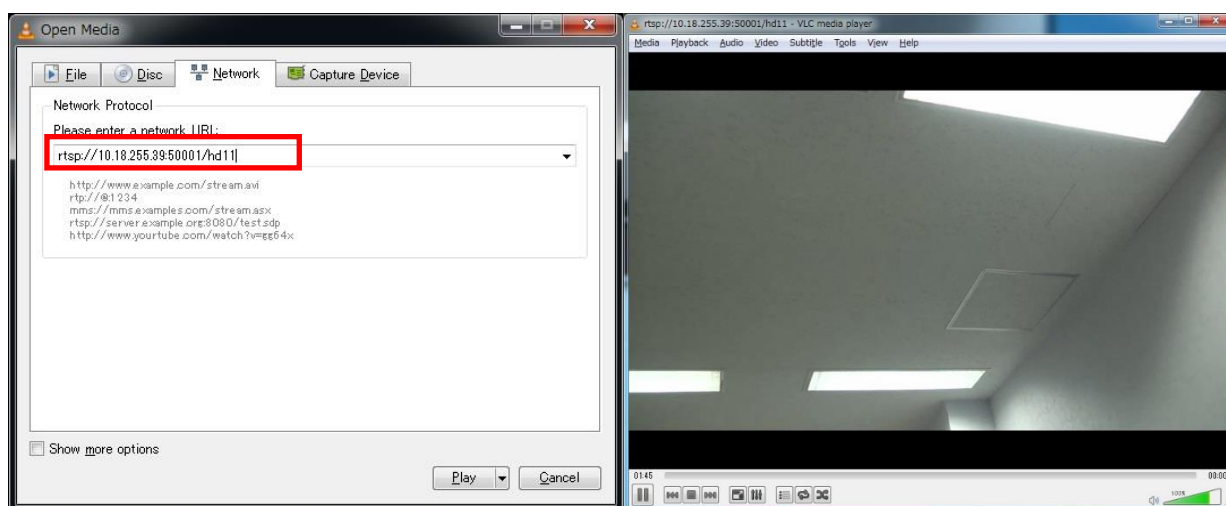


図 24. VLC MEDIA PLAYER(OPEN MEDIA ダイアログ)

4. 仕様

以下に STC HD View V5 の仕様を記載します。

表 24. STC HD VIEW V5 の仕様

主な機能	同時接続数	4
	接続可能製品	STC Zao-X, Zao App 販売終了製品 : STC Zao-S, STC Zao, STC HD Cam, STC for iOS ML, STC for Android ML
	符号化方式	VP8, H.265
	映像ビットレート	512~8000kbps ※STC Zao-X 16~10240kbps ※STC Zao 16~5120kbps ※STC Zao-S,Zao apps
外部出力	映像出力機	BlackmagicDesign Decklink Quad 2 (4ch 同時出力)
	対応信号形式	1080/59.94p,1080/50p,1080/29.97p,1080/25p,1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 480/59.94i, 576/50i
音声	符号化方式	Opus ※STC Zao-X Vorbis ※STC Zao-X 以外
	チャンネル	ステレオ ※STC Zao-X ステレオ/モノラル ※STC Zao-X 以外
	サンプリング	48kHz 固定 ※STC Zao-X 8~48kHz ※STC Zao-X 以外
	入力	PCM
	出力	PCM
	ビットレート	15.62~312.50kbps ※STC Zao-X 7.81~488.28kbps ※STC Zao-X 以外
動作環境	推奨ハードウェア	HP Z440 Workstation 以上
	対応 OS	Windows10 Pro 64bit
	CPU	Intel Xeon
	メモリ	16GB 以上

5. STC HD View で使用している OSS ライセンス

表 25. 使用している OSS ライセンス一覧

OSS 名	Copyright	License
libvpx	WebM project	New BSD License
libvorbis	Xiph.Org Foundation	New BSD License
libogg	Xiph.Org Foundation	New BSD License
picojson	Cybozu Labs, Inc., Kazuho Oku	BSD 2-Clause "Simplified" License
libavcodec, libavformat, libavutil, libavfilter, libswscale, libswresample	ffmpeg.org	GNU Lesser General Public License, version 2.1
spdlog	Gabi Melman	MIT License
getopt	NetBSD Foundation	BSD 2-Clause License
json11	Dropbox	MIT License
httplib	Yuji Hirose	MIT License
cryptopp	Wei Dai	Boost Software License 1.0
pthread	Ross P. Johnson	GNU Lesser General Public License, version 2.1
openssl	The OpenSSL Project	the OpenSSL License and the original SSLeay license
msgpack	FURUHASHI Sadayuki	Boost Software License 1.0
opus	Xiph.Org, Skype Limited, Octasic, Jean-Marc Valin, Timothy B. Terriberry, CSIRO, Gregory Maxwell, Mark Borgerding, Erik de Castro Lopo	BSD 3-Clause License
libsrtp	Cisco Systems, Inc.	BSD 3-Clause License
spdlog	Gabi Melman.	MIT License
fmt	Victor Zverovich	MIT License

5.1. libvpx

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5.11. pthreads

pthreads-win32 - a POSIX threads library for Microsoft Windows

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The contact addresses for pthreads-win32 is as follows:

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The goal of the pthreads-win32 project has been to
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by virtue of it being a stand-alone library and not
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example, some functions and features, such as those based

on POSIX signals, are missing.

Pthreads-win32 is a library, available in several different versions depending on supported compilers, and may be used as a dynamically linked module or a statically linked set of binary modules. It is not an application on it's own.

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Releasing pthreads-win32 under the LGPL ensures that the library can be used widely, while at the same time ensures that bug fixes and improvements to the pthreads-win32 code itself is returned to benefit all current and future users of the library.

Although pthreads-win32 makes it possible for applications that use POSIX threads to be ported to Win32 platforms, the broader goal of the project is to encourage the use of open standards, and in particular, to make it just a little easier for developers writing Win32 applications to consider widening the potential market for their products.



5.12. openssl

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5.14. opus

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